

# HF Happenings 733

South African Radio League \* Suid-Afrikaanse Radioliga  
Member Society of the International Amateur Radio Union since 1925

Volume 15, Issue 04, the week of 12 December 2016



## 60 m News

"The 60 Meter DX" newsletter reports that the Finnish Communication Regulatory Authority (FICORA) made a surprise decision today and allowed all OH-stations - regardless of the class - to use 5 MHz. It is the WRC frequencies 5 351.5 – 5 366.5 kHz and 15 W EIRP. So you might hear a lot of OH stations on the band today. The decision was retroactive from the morning of 9 December. However, those club stations as OH2P aka OH2BU, who have a special permit to use eight spot frequencies (5 278.6, 5 288.6, 5 298.6, 5 330.6, 5 346.6, 5 366.6, 5 371.6, and 5 398.6 ) are allowed to use them as long as their individual license for that is valid. For some stations, the license is valid until the end of 2019. FICORA promised earlier that the permit will be given from 1 January 2017, but did it now....

## DXing on the Edge

*DXing on the Edge - The Thrill of 160 Meters, 2nd edition*, a book by Jeff Briggs, K1ZM, is now available from DX Engineering [www.dxengineering.com/parts/dxe-dxingbook](http://www.dxengineering.com/parts/dxe-dxingbook) and also available from Array Solutions [www.arrayolutions.com/books/dxing-on-the-edge](http://www.arrayolutions.com/books/dxing-on-the-edge). Top band contesters will surely find something of interest in this book, which covers practical antennas, Top Band history and Top Band-specific operating techniques.

## Caffeine for Contests

If you need caffeinated beverage and food suggestions for contest weekends, the Centre for Science in the Public Interest has compiled a list of foods and beverages along with their caffeine content <https://cspinet.org/eating-healthy/ingredients-of-concern/caffeine-chart>. The categories includes coffees, teas, energy beverages, as well as caffeinated snack foods, ice creams and yogurts, chocolate candy and chocolate drinks, and over

You can now download your copy of HF Happenings from [www.sarl.org.za/hf\\_happenings.asp](http://www.sarl.org.za/hf_happenings.asp)

## December

- 1 - Start of "Youth on the Air" Month
- 2 to 4 - Round the Bend Camp, Swellendam
- 3 – International Day for Disabled Persons
- 3 and 4 - UK/EI DX SSB Contest; Beestekraal Festival Summer Bash
- 4 - SARL Digital Contest
- 7 - all schools close
- 8 to 31 - Witsand Christmas Market
- 10 - International Human Rights Day; Christmas Country Market, Wakkerstroom
- 10 and 11 - ARRL 10 m Contest
- 11 - SARL Youth Net
- 16 - Day of Reconciliation
- 21 - Summer Solstice
- 25 - Christmas Day; Channukah (1st Day)
- 26 - Family Day
- 27 - closing date for January 2017 Radio ZS articles
- 31 - Old Year's Eve; End of 2016 CQ Marathon and YOTA month

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-the-counter pills containing caffeine. Keep in mind that the Mayo Clinic recommend amount of caffeine is 400 mg per day for adults.

## Word to the Wise

Sequencer - a device which arbitrates and controls connections between various pieces of equipment in the receive and transmit signal chains. It is commonly used in UHF/VHF operations where transceivers, transverters, monoband amplifiers and pre-amplifiers are used in combination. For example, sequencers are used to make sure that elements of the receive chain such as preamplifiers are switched OUT during transmit, and that all proper transmit components such as amplifiers and filters are switched IN before RF is applied [www.pnvwvhfs.org/conference/2016/pdf/Marshall-K5QE-Sequencing-Presentation-v2.pdf](http://www.pnvwvhfs.org/conference/2016/pdf/Marshall-K5QE-Sequencing-Presentation-v2.pdf). Modern sequencers are highly configurable; to accommodate complex topologies with varied switching times.

## HamRadio360 Workbench

HamRadio360 Workbench is a series of podcasts around building Amateur Radio gear <http://hamradio360.com/index.php/workbench/>. It recently featured a community build of an Arduino based antenna analyser, including design of the PC board, and sourcing of parts <http://www.kj6vu.com/?p=1014>.

## Operating Tip

On-the-fly Macro Modification - consider using the ESCape key during the playback of a CW Macro to shorten it to suit your needs. For example, while running, if my "Thank you" message is "TU N9ADG," I might interrupt it to just send "TU" if I know that there is another caller but did not get their whole call. Similarly, I could lengthen a "CQ TEST N9ADG" message for the slow times by repeatedly stopping the message after the CQ and then finally sending the entire message: "CQ" "CQ TEST N9ADG."

## Backscatter communications on WiFi

Researchers at the University of Washington are using backscatter communications for ultra-low-power 802.11b Wi-Fi communications. [www.washington.edu/news/2016/02/23/uw-engineers-achieve-wi-fi-at-10000-times-lower-power/](http://www.washington.edu/news/2016/02/23/uw-engineers-achieve-wi-fi-at-10000-times-lower-power/). In their scheme, portable low-power devices generate 802.11b signals by receiving an out-of-channel carrier signal, then modulating and mixing the signal so it is transmitted on the desired band [http://passivewifi.cs.washington.edu/files/passive\\_wifi.pdf](http://passivewifi.cs.washington.edu/files/passive_wifi.pdf). The modulating and mixing steps require much less power relative to the generation of the carrier signal, achieving up to a 10 000-fold reduction in energy consumption.

## Over-the-horizon radar

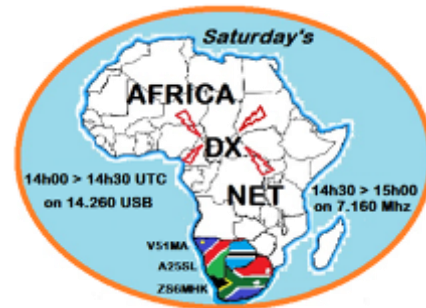
Over-the-horizon radar is an unwelcome intruder into the ham bands. In an example of making lemonade from lemons, Daniel, M0HXM, received and analysed the waveform of an OTH radar operating near 40 meters to compute the height of ionosphere reflections <http://desteve.net/2016/12/looking-at-an-hf-oth-radar/>. He used an IQ recording of the signal, processed by GNU Radio and other open source tools to perform his analysis. He has also improved his analysis in a follow-up article <http://desteve.net/2016/12/improving-signal-processing-in-my-oth-radar-receiver/>.

## African DX

The Gambia, C50. Vlad, UA4WHX, is now active as C50VB from The Gambia. As always, his length of stay unknown at this time. Activity will be on various HF bands (currently 40, 30, 20 and 17 m) using CW, SSB and the Digital modes. QSL via his home call sign.

Zimbabwe, Z2. Herbert, 7Z1HB, will be active as Z21LS until January 2017 from Zimbabwe. He is active on 40 to 10 m using SSB, PSK and RTTY. QSL via DE1ZHB, direct or via the bureau.

Niger, 5U. Alberto, EA1SA, Roberto, EA2RY, Javier, EA5KM, Antoio,



## January

- 1 - New Year's Day; start of 2017 CQ Marathon
- 2 - Public Holiday
- 11 - All schools open
- 14 and 15 - Hunting Lions in the Air
- 20 to 22 - PEARS National VHF/UHF Contest
- 25 - Closing date February Radio ZS articles
- 28 - Summer QRP Sprint; Chinese New Year

## South African National Frequency Plan

On Friday, ICASA published the proposed National Frequency Band plan in a 230 page document as part of a mega Government Gazette of over 500 pages.

The band plan creates a number of challenges for Amateur Radio which will have to be addressed and documented for submission to ICASA by 27 January 2016 followed by public hearings which may be held on 2 and 3 February 2017. It is expected that ICASA will publish the draft National Radio Frequency Plan on <http://www.icasa.org.za/>

Watch the SARL homepage for more information as and when it becomes available.



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EA5RM (Team Leader), Manuel, EA7AJR, Jose, EA7KW, Tony, F8ATS, Bernard, F9IE, Faber, HK6F, Fabrizio, IN3ZNR, Mike, RU1WM and Valery, UT7CR, all members of the Tifariti Gang, will be active as 5U5R from Niamey, Niger, between 8 to 21 March 2017. Activity will be on all bands between 160 to 6 meters using CW, SSB and RTTY. QSL via EA5RM. An OQRS will be available after the DXpedition. For more info and updates, watch <http://www.dxfriends.com>, 5u5r



## IOTA frequencies

CW: 28 040 24 920 21 040 18 098 14 040 10 114 7 030 3 530 kHz  
SSB: 28 560 28 460 24 950 21 260 18 128 14 260 7 055 3 760 kHz



Chagos Islands, VQ9. Steve, WB4GHY, is now active as VQ9SC from Diego Garcia Island (AF-006). His length of stay is unknown at this time. Activity has been on 40, 20 and 15 meters SSB. QSL via his home call sign.

Senegal, 6W. Members of the Association des Radio-Amateurs du Senegal (ARAS) will be active from Goree Island (AF-045) between 16 and 18 December as 6V1A on HF using SSB, CW and the digital modes). QSL via 6W7JX direct.

News of HF transmissions from Mili Atoll in the Republic of the Marshall Islands has generated much interest on QRZ.com. The announcement generated a flurry of comments at a rate possibly not seen since the Code versus No-Code debates of a decade ago.

Les Kinney and Dick Spink are trying to solve the mystery of the disappearance of aviation pioneer Amelia Earhart in 1937 and believe her plane may have come down on the Mili Atoll. On 15 and 16 December, they plan to make transmissions on the original short-wave frequencies used by Amelia, 3 105 and 6 210 kHz.

Read the QRZ.com post at <https://forums.qrz.com/index.php?threads/marshall-island-and-amelia-earharts-sos-transmissions-sending-again.547307/>

Tech Visionary, Radio Amateur and 73 Magazine Publisher Wayne Green, W2NSD, was convinced he knew what happened to Amelia  
[www.computerworld.com/article/2480142/tech-visionary-offers--real-dope--on-amelia-earhardt.html](http://www.computerworld.com/article/2480142/tech-visionary-offers--real-dope--on-amelia-earhardt.html)

Discovery Channel - Finding Amelia [www.discovery.com/tv-shows/other-shows/videos/other-shows-finding-amelia-videos/](http://www.discovery.com/tv-shows/other-shows/videos/other-shows-finding-amelia-videos/)

National Geographic Channel  
<http://news.nationalgeographic.com/2015/05/150528-amelia-earhart-spink-marshall-islands-aviation/>

Daily Mail [www.dailymail.co.uk/news/article-3153107/I-know-saw-saw-lady-Revealed-Pacific-islanders-insist-Amelia-Earhart-taken-prisoner-Japanese-crashing-remote-atoll.html](http://www.dailymail.co.uk/news/article-3153107/I-know-saw-saw-lady-Revealed-Pacific-islanders-insist-Amelia-Earhart-taken-prisoner-Japanese-crashing-remote-atoll.html)

The IARU-R1 Monitoring System newsletter reports one of Beijing's HF Over The Horizon Radars has been transmitting on 6,999 MHz covering CW DX in the 40 m amateur radio band.

The newsletter says: A jumping Chinese OTH radar covered the CW DX-edge of our exclusive 7 MHz band on 17 November at about 15:00 UTC and later (long lasting). Parameters: 67 sps and 10 kHz wide.

IARUMS also report the Australian Jindalee Operational Radar Network (JORN) has been heard on 10,131 MHz in the amateur 30 m band. The Marconi Radar History site reports JORN was developed by GEC-Marconi HF Systems using staff from Chelmsford, Essex

[http://marconiradarhistory.pbworks.com/w/page/54067382/Over%20The%20Horizon%20Radar%20\(OTHR\)%20and%20JORN](http://marconiradarhistory.pbworks.com/w/page/54067382/Over%20The%20Horizon%20Radar%20(OTHR)%20and%20JORN)

The International Amateur Radio Union Monitoring System (IARUMS) Region 1 November 2016 newsletter can be read at

<http://www.iarums-r1.org/iarums/news2016/news1611.pdf>

Reports of Amateur Band intruders can be logged on the IARU Region 1 Monitoring System Logger at <http://peditio.net/intruder/bluechat.cgi>

Monitor the short wave bands on-line with a web based SDR receiver at <http://www.websdr.org/>

IARU Monitoring System  
(IARUMS) [http://www.iaru-r1.org/index.php?option=com\\_content&view=category&layout=blog&id=39&Itemid=87](http://www.iaru-r1.org/index.php?option=com_content&view=category&layout=blog&id=39&Itemid=87)



## Contest Calendar

This week's contests as compiled by Bruce Horn, WA7BNM. The period covered is 5 to 12 December 2016

### Phone Fray

02:30 - 03:00 UTC 14 December

Mode: SSB

Bands: 160, 80, 40, 20, 15 m

Classes: Single Op

Max power: 100 watts

Exchange: NA: Name and state, province or country; non-NA: Name

Work stations: Once per band

QSO Points: NA station: 1 point per QSO; non-NA station: 1 point per QSO with an NA station

Multipliers: Each US state (including KH6/KL7) once per band; Each VE province/territory once per band; Each North American country (except W/VE) once per band

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 03:00 UTC 16 December 2016

E-mail logs to: (none)

Post log summary at: <http://www.3830scores.com>

Mail logs to: (none)

Find rules at: <http://www.perluma.com/>

[Phone Fray Contest Rules.pdf](#)

### CWops Mini-CWT Test

13:00 - 14:00 UTC and 19:00 - 20:00 UTC 14 December and 03:00 - 04:00 UTC 15 December

Mode: CW

Bands: 160, 80, 40, 20, 15, 10 m

Classes: Single Op - QRP, low or high

Max power: HP: >100 watts; LP: 100 watts; QRP: 5 watts

Exchange: Member: Name and member no; non-Member: Name and state, province or country

Work stations: Once per band

QSO Points: 1 point per QSO

Multipliers: Each call once

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 04:00 UTC 17 December 2016

Post log summary at: <http://www.3830scores.com>

Mail logs to: (none)

Find rules at: <http://www.cwops.org/cwt.html>

### NCCC RTTY Sprint

01:45 - 02:15 UTC 16 December

Mode: RTTY

Bands: (see rules)

Classes: (none)

Exchange: Serial no, name and QTH

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 18 December 2016

E-mail logs to: (none)

Post log summary at: <http://www.3830scores.com/>

Mail logs to: (none)

Find rules at: <http://www.ncccsprint.com/rttyns.html>

### QRP Fox Hunt

02:00 - 03:30 UTC 16 December

Mode: CW

Bands: 80 m Only

Classes: Single Op – fox or hound

Max power: 5 watts

Exchange: RST, state, province or country, name and power output

QSO Points: 1 point per QSO

Multipliers: (none)

Score Calculation: Total score = total QSO points

Submit logs by: 03:30 UTC 17 December 2016

E-mail logs to: (see rules)

Mail logs to: (none)

Find rules at: [http://www.qrpfoxhunt.org/winter\\_rules.htm](http://www.qrpfoxhunt.org/winter_rules.htm)

### NCCC Sprint

02:30 - 03:00 UTC 16 December

Mode: CW

Bands: (see rules)

Classes: (none)

Exchange: Serial no, name and QTH

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 18 December 2016

E-mail logs to: (none)

Post log summary at: <http://www.3830scores.com/>

Mail logs to: (none)

Find rules at: <http://www.ncccsprint.com/rules.html>

### Russian 160-Meter Contest

20:00 UTC 16 December to 24:00 UTC 17 December

Mode: CW, SSB

Bands: 160 m Only

Classes: Single Op

Multi-Op

Exchange: Rus: RS(T) and Oblast code; non-Rus: RS(T) and serial no

Work stations: Once per mode

QSO Points: (see rules)

Multipliers: Each DXCC entity once; Each Oblast once

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 31 December 2016

E-mail logs to: [contest@radio.ru](mailto:contest@radio.ru)

Upload log at: <http://ua9qcq.com/contests/robot.php>

Mail logs to: (none)

Find rules at: <http://www.qrz.ru/contest/detail/90.html>

### AGB-Party Contest

21:00 - 24:00 UTC 16 December

Mode: CW, SSB, Digital

Bands: 80, 40 m

Classes: Single Op All Band - CW, SSB or mixed; Single Op Single Band; Single Op Digital; Single Op QRP; Multi-Op; SWL

Exchange: AGB Member: RST, QSO no and member no; non-Member: RST and QSO no

Work stations: Once per mode per 15-minute period (see rules)

QSO Points: 1 point per QSO with same continent; 3 points per QSO with different continent; 5 points per QSO with AGB member

Multipliers: Each AGB member once; Each DXCC/WAE country once

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 13 January 2017

E-mail logs to: [eu1eu@mail.ru](mailto:eu1eu@mail.ru)

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Mail logs to: Igor "Harry" Getmann, EU1EU, PO Box 143, Minsk 220005, Belarus

Find rules at: [www.ev5agb.com/contest/agb\\_party.htm](http://www.ev5agb.com/contest/agb_party.htm)

#### Feld Hell Sprint

00:00 - 23:59 UTC 17 December

Mode: Feld Hell

Bands: 160, 80, 40, 20, 15, 10, 6 m

Classes: (none)

Max power: Standard: 100 watts; QRP: 5 watts

Exchange: (see rules)

Work stations: Once per band

QSO Points: (see rules)

Bonus Points: (see rules)

Multipliers: (see rules)

Score Calculation: (see rules)

Submit logs by: 21 December 2016

Upload log at: <https://sites.google.com/site/feldhellclub/>

Mail logs to: (none)

Find rules at: <https://sites.google.com/site/feldhellclub/Home/contests/sprints/Happy-Birthday-Rudolph-Sprint>

#### OK DX RTTY Contest

00:00 - 24:00 UTC 17 December

Mode: RTTY

Bands: 80, 40, 20, 15, 10 m

Classes: Single Op All Band – low or high; Single Op Single Band; Multi-Op; SWL

Max operating hours: 24 hours

Max power: HP: >100 watts; LP: 100 watts

Exchange: RST and CQ Zone

QSO Points: 10 - 20 m: 1 point same continent, 2 points different continent; 40 - 80 m: 3 points same continent, 6 points different continent

Multipliers: DXCC Countries, once per band; OK stations, once per band

Score Calculation: Total score = total QSO points x (DXCC mults and OK mults)

Submit logs by: 24 December 2016

Upload log at: <http://okrtty.crk.cz/index.php?page=send-log>

Mail logs to: (none)

Find rules at: <http://okrtty.crk.cz/index.php?page=english>

#### RAC Winter Contest

00:00 - 23:59 UTC 17 December

Mode: CW, Phone

Bands: 160, 80, 40, 20, 15, 10, 6, 2 m

Classes: Single Op All Band - QRP, low or high; Single Op CW; Single Op Phone; Single Op Single Band; Multi-Single – low or high; Multi-Multi

Max operating hours: 24 hours

Max power: HP: >100 watts; LP: 100 watts; QRP: 5 watts

Exchange: VE: RS(T) and province or territory; non-VE and

VE0: RS(T) and serial no

QSO Points: VE/VE0: 10 points; non-VE/VE0: 2 points; RAC official stations: 20 points

Multipliers: VE provinces and territories (13), once per mode per band

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 31 January 2017

E-mail logs to: [canadawinter@rac.ca](mailto:canadawinter@rac.ca)

Mail logs to: Radio Amateurs of Canada, 720 Belfast Road, Suite 217, Ottawa, Ontario K1G 0Z5, Canada

Find rules at: <http://wp.rac.ca/rac-canada-winter-contest-rules/>

#### Padang DX Contest

12:00 - 23:59 UTC 17 December

Mode: SSB

Bands: 40 m Only

Classes: Single Op

Exchange: RS and serial no

QSO Points: 1 point per QSO with same continent; 2 points per QSO with different continent; 8 points per QSO with YB station

Multipliers: Each YB prefix

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 24 December 2016

E-mail logs to: (none)

Upload log at: <http://padang.qrzyb.com/log-submission/>

Mail logs to: (none)

Find rules at: [http://orari.or.id/files/Padang\\_DX\\_Contest\\_2016\\_Rules\\_902181374.pdf](http://orari.or.id/files/Padang_DX_Contest_2016_Rules_902181374.pdf)

#### AWA Bruce Kelley 1929 QSO Party

23:00 UTC 17 December to 23:00 UTC 18 December

Mode: CW

Bands: 160, 80, 40 m

Classes: (none)

Exchange: RST, name, QTH, Eqpt Year and Transmitter Type (see rules for format)

QSO Points: (see rules)

Multipliers: (see rules)

Score Calculation: Total score = total QSO points

Submit logs by: 15 January 2017

E-mail logs to: [wa9wfa@comcast.net](mailto:wa9wfa@comcast.net)

Mail logs to: Scott Freeberg WA9WFA, 327 Wildwood Avenue, Saint Paul, MN 55110, USA

Find rules at: <http://www.antiquewireless.org/bruce-kelley-memorial-cw-qso-party.html>

#### Croatian CW Contest

4:00 UTC 17 December to 14:00 UTC 18 December

Mode: CW

Bands: 160, 80, 40, 20, 15, 10 m

Classes: Single Op All Band - QRP, low or high; Single Op Single Band – low or high; Multi-Single

Max operating hours: 24 hours

Max power: HP: 100 or more watts; LP: <100 watts; QRP: 5 watts

Exchange: RST and serial no

QSO Points: Own continent: 2 points 40 - 160 m, 1 point 10 - 20 m; Other continents: 6 points 40 - 160 m, 3 points 10 - 20 m; 9A stations: 10 points 40 - 160 m, 6 points 10 - 20 m

Multipliers: DXCC/WAE Countries, once per band

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 26 December 2016

Upload log at: <http://www.hamradio.hr/hfrobot>

Mail logs to: (none)

Find rules at: <http://9acw.org/index.php/rules/english/116-rules-2016>

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Stew Perry Topband Challenge

15:00 UTC 17 December to 15:00 UTC 18 December

Mode: CW

Bands: 160 m Only

Classes: Single Op; Multi-Op

Max operating hours: 14 hours

Max power: HP: >100 watts; LP: 5 - 100 watts; QRP: <5 watts

Exchange: 4-Character grid square

QSO Points: 1 point per QSO plus 1 point per 500 km; multiply QSO points by 2 if low power station; multiply QSO points by 4 if QRP station

Multipliers: Low power: x1.5; QRP: x3

Score Calculation: Total score = total QSO points x power multiplier

Submit logs by: 2 January 2017

E-mail logs to: [tbd@kkn.net](mailto:tbd@kkn.net)

Mail logs to: BARC, 15125 SE Bartell Rd, Boring, OR 97009, USA

Find rules at: <http://www.kkn.net/stew/>

ARRL Rookie Roundup, CW

18:00 - 23:59 UTC 18 December

Mode: CW

Bands: 80, 40, 20, 15, 10, 6 m

Classes: Single Op Rookie; Multi-Op Rookie; Non-Rookies

Max power: 100 watts

Exchange: NA: Name, 2-digit year first licensed and state, province, XE area or DX

Work stations: Once per band

QSO Points: 1 point per QSO with non-rookie; 2 points per QSO with rookie

Multipliers: Each US state and DC once; Each VE province once; Each XE call area once; One DX once

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 23:59 UTC 21 December 2016

E-mail logs to: (none)

Post log summary at: [http://www.b4h.net/arrlrr/rr\\_scoresubmission.php](http://www.b4h.net/arrlrr/rr_scoresubmission.php)

Mail logs to: (none)

Find rules at: <http://www.arrl.org/rookie-roundup>

Run for the Bacon QRP Contest

02:00 - 04:00 UTC 19 December

Mode: CW

Bands: 160, 80, 40, 20, 15, 10 m

Classes: Single Band; All Band

Max power: 5 watts

Exchange: RST, state, province or country and member no or power

Work stations: Once per band

QSO Points: 1 point per QSO with non-member; 3 points per QSO with member on same continent; 5 points per QSO with member on different continent

Multipliers: Each state, province or country once

Multiply mults by 2 if >50 members worked

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 25 December 2016

E-mail logs to: (none)

Upload log at: <http://grpcontest.com/pigrun/autolog.php>

Mail logs to: (none)

Find rules at: <http://grpcontest.com/pigrun/>



## Next Week's Contests

QRP Fox Hunt, 02:00 - 03:30 UTC 21 December

Phone Fray, 02:30 - 03:00 UTC 21 December

CWops Mini-CWT Test, 13:00 - 14:00 UTC and 19:00 - 20:00 UTC 21 December and 03:00 - 04:00 UTC 22 December

NAQCC CW Sprint, 01:30 - 03:30 UTC 22 December

NCCC RTTY Sprint, 01:45 - 02:15 UTC 23 December

QRP Fox Hunt, 02:00 - 03:30 UTC 23 December

NCCC Sprint, 02:30 - 03:00 UTC 23 December

RAEM Contest, 00:00 - 11:59 UTC 25 December

DARC Christmas Contest, 08:30 - 10:59 UTC 26 December

## HF Happenings

Items used with acknowledgement to the ARRL Letter, the ARRL DX News, the ARRL Contest Update, OPDX Bulletin, 425 DX Bulletin, DXNL Newsletter, WIA-News, the RSGB News, DxCoffee, Southgate ARC News, DX World and the Amateur Radio Newsletter